

Patent Abstracts of Japan

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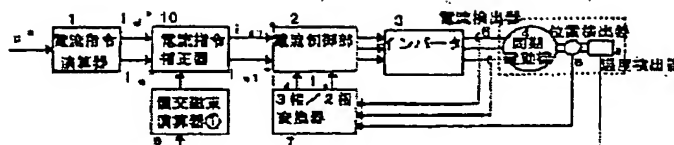
APPLICATION DATE : 01-08-00  
APPLICATION NUMBER : 2000232681

APPLICANT : FUJI ELECTRIC CO LTD;

INVENTOR : ISHII SHINICHI;

INT.CL. : H02P 21/00 H02P 6/06

TITLE : MOTOR CONTROLLER



ABSTRACT : PROBLEM TO BE SOLVED: To suppress the torque fluctuation of a motor caused by temperature.

SOLUTION: For controlling a motor 4 in which a temperature detector 8 and a position detector 5 are incorporated as sensors, a computing unit 9 which estimates the magnetic flux of the motor 4 by computation based on the temperature detected by means of the temperature detector 8, and a current command correcting device 10 which performs prescribed correction on the current which causes the motor 4 to generate torque based on the estimated value of the magnetic flux, are provided. The motor 4 is made to generate torque that is not affected by temperature fluctuation by controlling the motor 4 by using the output of the correcting device 10 as a new current command value.

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PUBLICATION NUMBER : 2000224812  
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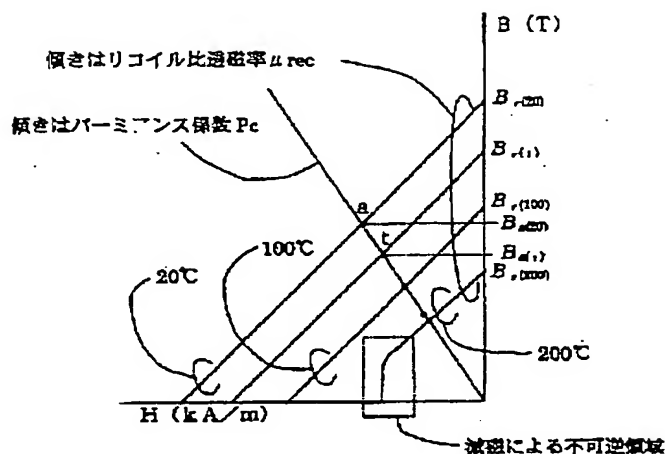
APPLICATION DATE : 29-01-99  
 APPLICATION NUMBER : 11021051

APPLICANT : TOYO ELECTRIC MFG CO LTD;

INVENTOR : NAKAMURA MASANORI;

INT.CL. : H02K 11/00 H02P 21/00

TITLE : CONTROL OF PERMANENT-MAGNET  
 ROTATING ELECTRIC MACHINE



**ABSTRACT :** PROBLEM TO BE SOLVED: To prevent the precision of torque from worsening by providing a means for measuring or estimating the temperature of a permanent magnet, and correcting the variation of interlinking magnetic flux based on the temperature coefficient of the residual magnetic flux density of the permanent magnet by d-axis current control.

**SOLUTION:** A change of the residual magnetic flux density of a magnet by its temperature is formed by a temperature coefficient being a magnetic characteristic of the magnet. When the temperature of the magnet is 20°C, its residual magnetic flux density is  $B_r(20)$ , and an interlinking magnetic flux density is  $B_a(20)$ , when the operating point of the rotating electric machine at a permeance coefficient  $P_c$  is at point (a). When the temperature of the magnet becomes  $t^\circ\text{C}$ , the residual magnetic flux density becomes  $B_r(t)$ , and the operating point moves to point (t) and the interlinking magnetic flux density changes to  $B_a(t)$ . Besides, the variation of the interlinking magnetic flux by a temperature change can be compensated by controlling a d-axis current by measuring or estimating the temperature of the magnet, even if the rotating electric machine to be operated by interlinking magnetic flux  $\phi_a$  at a certain design temperature changes to  $\phi_a(t)$ . Consequently, it becomes possible to make its torque constant.

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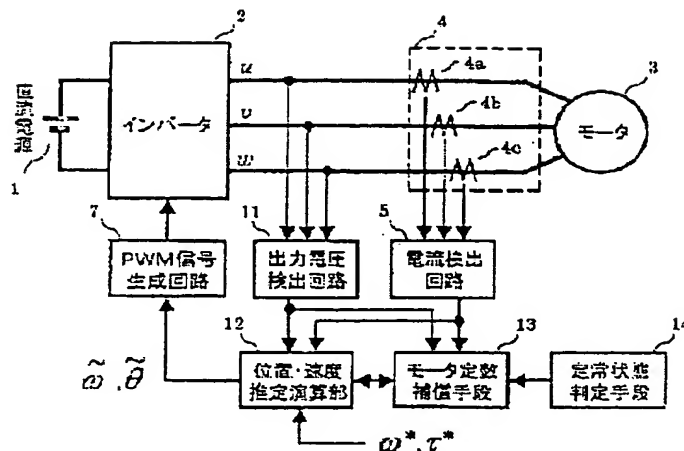
APPLICATION DATE : 24-11-00  
APPLICATION NUMBER : 2000357286

APPLICANT : MATSUSHITA ELECTRIC IND CO LTD;

INVENTOR : KAWACHI MITSUO;

INT.CL. : H02P 6/06 H02P 5/00

TITLE : MOTOR CONTROLLER



ABSTRACT : PROBLEM TO BE SOLVED: To provide a motor controller for estimating the rotor magnetic pole position or rotating angular velocity in order to improve, on the rear-time basis, estimation accuracy by compensating for change of motor constant due to temperature rise during operation, and to realize the stable motor drive system.

SOLUTION: A motor constant compensating means compensates for the change of motor constant, using any one of a motor current or a motor voltage corresponding to an output signal of a steady-state determining means for determining whether the operating condition reaches the steady state. A position/ velocity estimating and calculating means estimates the magnetic pole position of a rotor or a rotational angular velocity, based on the motor constant and then outputs it to a PWM signal generating circuit. By using the estimation accuracy can be improved, using the compensated motor constant, and thereby highly accurate velocity and torque control can be realized.

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